DETAILED ACTION

1. The amendment filed March 26, 2008 overcomes the following objection/rejection of the last Office Action:

   a. Objection to the specification;

   b. Drawings objection to Fig 3, step S411; Fig 4A, step S511 and Fig 4B, step 511;

   c. Claim rejection under 112 1st and 2nd paragraphs, since claims 9 and 18 have been cancelled;

   d. Claim rejection under 103, since claims 9 and 18 have been cancelled;

2. Claims 9 and 18 have been canceled.

Response to Arguments

3. Applicant's arguments filed 3/26/08 for claims 1-8, 10 – 14, and 19-20 have been fully considered but they are not persuasive.

4. Regarding page 10, lines 9 – 13; where applicant cites [0009], Daiku, on referring "**each pixel of the single-plate-type color-image sensor 13 produces a pixel signal, and the pixel signals are read one by one.**", therefore, the pixels are sampled one by one in Daiku instead of being sampled in groups. As discussed by Daiku, [0009] refers to the prior art. However, in [0012], Daiku discloses his invention, referring to Figs 3A and 3B, where the pixels are sampled

not one by one but in groups instead of 6X6 blocks (or 6X6 sampling units as applicant claims). Therefore, the invention claimed is not novel, since it is anticipated by Daiku.

For the reasons as stated above, the previous rejections are maintained.

Claim Rejections - 35 USC § 102

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-8, 10 – 14, and 19-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Hiroshi Daiku et al. US PG Pub. 2004/0017493 A1 (filing date 07/07/2003), hereinafter, "Daiku".

Regarding claim 10, which recites:

A apparatus for sensing an image, the apparatus comprising a plurality of image sensor cells being divided and grouped into a plurality of image cell groups, each of the image cell groups comprising a portion of said image sensor cells, wherein an image sampling process is performed on all of the image cell groups as sampling units and image signals are sampled and generated therefrom.

(This claim is anticipated by Daiku for the following reasons. In paragraph [0004], Daiku teaches a color image sensor composed by a pixel array (Fig. 1), comprising a plurality of image sensor cells or pixels arrayed in a two-dimensional manner [0004] in groups composed of

four pixels, with one red (R) pixel , two green (G) and one blue (B), which are repeated throughout the array in the Bayer pattern. The position of each pixel in the array or pixel matrix is expressed by coordinates. Then, for instance, in the first row and first column, the red pixel R1,1 is located; in the fourth row and third column, green pixel G3,4 is located and so on and so forth. Therefore, the group of 4 pixels can be considered as the sampling unit. The readout out is performed on all the image cells and the analog image signal generated by the each pixel is converted into digital by an analog-digital (A/D) converter and outputted to a processing circuit. In Figure 7A, Daiku also shows a digital signal processing unit and a CPU that would do the image sensor cells sampling process.)

Regarding claim 11:

The apparatus as claimed in claim 10, wherein the image sampling process performed on the image cell groups is determined by an image processing specification thereafter.

(This claim is rejected in view of the same rationale used in claim 10. It is inherent in cameras/CMOS sensors technology to have image processing and associated system control (CPU) for determining how the sampling process is performed.)

Regarding claim 12:

The apparatus as claimed in claim 10, wherein a number of the image sensor cells in each of the image cell groups is the same.

(This claim is rejected in view of the same rationale used in claim 10. Daiku, [0004], teaches a sampling unit of 4 pixels that is repeated throughout the pixel array of Figure 1. Therefore, it will keep the same number of pixels per pixel unit.)

Regarding claim 13:

The apparatus as claimed in claim 10, wherein a number of the image sensor cells in each of the image cell groups is different from each other.

(This claim is rejected in view of the same rationale used in claim 10. In the expressions written below the pixel array of Figure 8, Daiku teaches this limitation for the green pixel units G1 and G2. G1 is composed by adding pixels such as (1×G2,1 + 1×G1,2 + 1×G3,2 + 1×G2,3)/4. For the green pixel unit G2 he adds a different amount of green pixels, as (1×G1,1 + 1×G6,1 + 4×G5,2 + 1×G4,3 + 1×G6,3). One skilled in the art would interpret it as having pixel units with different number of pixels (or sensor cells), since in G1 one has the total of one pixel for the green pixel unit and for the green unit G2, one has the total of 7 pixels.)

Regarding claim 14:

The apparatus as claimed in claim 10, wherein all of the image sensor cells are arranged in an array order, called image cell array.

(This claim is rejected in view of the same rationale used in claim 10. In Fig 1 and paragraph [0004], Daiku teaches a pixel array, where the pixels are image cells and therefore, for the one skilled in the art, they form a so called image cell array.)

Regarding claim 19:

The apparatus as claimed in claim 10, wherein each of the image sensor cells comprising a plurality of color sensor units, the color sensor units being used to sense red, green and blue lights, respectively.

(This claim is rejected in view of the same rationale used in claim 10. As discussed in the aforementioned rejection, Daiku teaches in [0004] a color image sensor composed by a pixel array (Fig. 1), comprising a plurality of image sensor cells or pixels arrayed in a two-dimensional manner [0004] in groups composed by four pixels, with one red (R) pixel , two green (G) and one blue (B) or in the Bayer pattern. This 4-pixel unit is repeated throughout the pixel array.)

Regarding claim 20:

The apparatus as claimed in claim 10, wherein each of the image sensor cells comprises a color sensor unit, the color sensor unit being used to sense one of the red, green and blue lights, respectively.

(This claim is rejected in view of the same rationale used in claims 10 and 18, since Daiku, [0004], teaches a pixels array (Fig. 1) composed by a plurality of color sensors, with the smallest unit comprising 4 pixels, one red (R), two green (G) and one blue (B), which would sense the light wavelengths corresponding to each filter. Therefore, the "blue sensor" has a blue filter, which would permit only blue light component to pass through it and to be absorbed by the photodiode. The same rationale is applied to the other color filters.)

Regarding claims 1-8, which pertain to a method comprising steps corresponding to elements of apparatus claims 10 - 20. Thus, claims 1-8 are rejected as applied to claims 10-20 because operating the apparatus of claims 10-20 would have inherently necessitated performing the method steps as recited in claims 1-8.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time.

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Yasuhiro Yamamoto, US 5,526,048 A

2. Schemmel et al., US 5,943,551 A

3. Mabuchi et al., US PG Pub 2002/0100921 A1

4. Tetsuya Iizuka, US PG Pub 2002/0158980 A1

5. Kuno et al., US PG Pub 2003/0081132 A1

6. Sergey N. Bezryadin, US PG Pub 2003/0214594 A1

7. Sandini et al., US 7,009,645 B1

8. Boreman et al., US 7,095,027 B1

Contact

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARLY CAMARGO whose telephone number is (571)270-3729. The examiner can normally be reached on 6:00AM - 10PM, M-F, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571)272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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